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Explaining Local Government Cooperation on Public Works: Evidence from Michigan

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In recent years, analysts have begun to study cooperation on public services among local governments. These studies have often concluded that services with scale economies are likely candidates for shared service delivery. This article contributes to the emerging literature on this topic by examining interlocal service arrangements for ten public works services in Michigan. Despite the fact that public works exhibit substantial scale economies, many local governments do not cooperate on these services. Empirical studies of local government contracting suggest four groups of factors that may help explain why local governments opt to collaborate on public services: local economic factors, characteristics of the communities in areas adjacent to the local government, demographic characteristics of the local government, and the influence of policy and planning networks. We use data on the service delivery arrangements from 468 general-purpose local governments in Michigan to examine the role played by the factors in explaining interlocal cooperation on public works.

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In this era of fiscal pressure, local governments are continuously challenged to fulfill their roles as providers of essential public services. Reductions in state and federal aid, rising health care costs, and legal constraints on the ability of local governments to levy increased taxes all create fiscal pressures for local governments attempting to maintain or improve the quality and level of necessary services. As fiscal pressure increases, local public officials are prompted to consider alternative service delivery options in an effort to reduce costs or avoid cost increases.

In addition to fiscal pressures, the boundary spanning nature of local policy problems creates a further incentive for local governments to consider alternatives to direct, autonomous service provision. Extensive jurisdictional fragmentation is often seen as problematic for effectively managing several different local issues. Environmental issues, crime, economic development, and many other problems increasingly transcend the borders of political jurisdictions, creating the need for collective action by local governments (Frederickson, 1999; Feiock, 2004). Public works functions exemplify the transjurisdictional nature of local public services as roads and utility trunk lines for vital services such as water and sewer generally extend over multiple local government boundaries.

Intergovernmental agreements represent one form of alternative service delivery that local governments might use to maintain service costs, minimize spillover effects, and manage boundary-spanning infrastructure. These agreements have become a common tool for cooperative service delivery, as evidenced by the fact that a majority of cities and counties in the United States are party to at least one such agreement (ACIR, 1985; Zimmerman, 1973). Interlocal service agreements may hold greater appeal for local government officials than other

alternatives because they are highly flexible policy instruments. These agreements, whether established as written contracts or "handshake deals," are far less permanent than functional consolidation or special district formation, providing local government officials with the flexibility to renegotiate terms or opt out when circumstances warrant such a decision.

There are few empirical studies examining why local governments cooperate for public services. Research on this topic has yet to produce a consensus on the motivations for using these agreements, the contextual factors predicting their usage, or the types of services covered. The role played by local fiscal capacity has been particularly difficult to pin down. Some studies have found fiscal stress to be a highly important factor influencing the decision to use interlocal agreements (Bartle and Swayze, 1997; Stein, 1990; Wood, 2006), while others have concluded that resource levels play a secondary role to other factors, such as the desire to improve the quality of services (Thurmaier and Chen, 2005; Morgan and Hirlinger, 1991; Thurmaier and Wood, 2002).

We contribute to this emerging literature on interlocal services cooperation with an analysis of interlocal agreements for public works services. The state of Michigan provides the context for this study, and the interlocal service delivery arrangements of 468 general-purpose local governments from across the state serve as the objects of our analysis. For this study, general-purpose local governments are defined as cities, villages, townships and counties. While a single-state perspective carries limitations for generalizing the findings, it is also advantageous in several ways. A single state analysis controls for the influence of variations in state laws, state political culture, state economies, and a number of other factors that would be nearly impossible to capture in a multi-state analysis.

We examine several different questions in this study. First, to what extent do local governments use interlocal agreements for public works as opposed to other types of services arrangements? Do local governments of different types vary in their reliance on interlocal agreements for public works? What are the factors that explain the propensity of governments to cooperate with other local governments on different public works services? Finally, are differences in the demographic makeup of different communities important factors in explaining reliance on interlocal agreements, or instead are these decisions primarily the product of fiscal considerations, as conventional wisdom suggests?

We believe that an analysis of public works cooperation is important because it is one of the few areas of local public services in which nearly all aspects of the service are capital-intensive. Services with obvious scale economies are often mentioned as strong candidates for interlocal cooperation because of the expected cost savings from large-scale projects. Public works have high costs and are designed to cover large geographic areas in many cases. By focusing on interlocal cooperation on public works services, we are able to limit the analysis to services with significant scale economies. This permits us to focus more directly on the many other factors that may influence cooperation decisions.

Public Services Cooperation through Interlocal Agreements

Interlocal service agreements assume several different forms. The Advisory Commission on Intergovernmental Relations (ACIR, 1985) identified three types of interlocal agreements: intergovernmental service contract, joint service agreement, and intergovernmental service

transfer. For the purpose of this study, we treat all three forms of these service agreements as evidence of interlocal cooperation.

Intergovernmental service contracts are legally binding agreements between two or more general-purpose local government units in which one pays the other for the delivery of a particular service to the citizens residing in the jurisdiction of the paying government. Intergovernmental service contracts may be formal (written) or informal (unwritten). Any written agreement to pay another unit of government for services is a contract, even if the document is simply a memorandum of understanding (MOU). The ACIR study found that nearly twice as many cities and counties use written contracts as unwritten contracts, and that unwritten contracts are more common in cities and counties with populations under 2,500 (ACIR, 1985).

Joint service agreements are those that exist between two or more units of government for the joint planning, financing, and delivery of a service to the citizens of all jurisdictions participating in the agreement. Joint agreements specify the division of labor, mutual responsibilities and liabilities of various parties when multiple jurisdictions collaborate. Previous research indicates that cities and counties use joint service agreements slightly more often than contracts (ACIR, 1985). Joint purchase agreements are another form of cooperation in this category. Local governments sometimes create arrangements for the joint purchase of equipment and supplies that both governments need.

Intergovernmental service transfers refer to situations in which total responsibility for the provision of a service is transferred from one governmental unit to another. These transfers may be permanent or temporary. At the time of the ACIR report, eighteen states had legal provisions authorizing intergovernmental transfers of service responsibility. Michigan is one of the states permitting intergovernmental transfer of functions.

Explanations for why Local Governments Rely on Intergovernmental Service Agreements

When local government officials consider contracting or jointly providing services with other local governments, their decision to cooperate is likely to be driven in part by the characteristics of the good or service (Ferris and Graddy, 1986). There is an extensive literature on local government contracting indicating that services that are asset specific, capital intensive, or otherwise possess properties of scale economies are strong candidates for delivery through intergovernmental agreements, and previous research has often focused on these factors. (See LeRoux (2006) and Shrestha and Feiock (2006) for good reviews of these issues.) Public works require specialized assets and large capital investments and these characteristics are thought to provide strong fiscal incentives for the use intergovernmental agreements to provide and deliver these services.

Public works activities, such as water distribution, solid waste disposal, storm water management, and highway construction and maintenance are also classic examples of systems maintenance functions (Williams, 1971). Several studies have found interlocal service cooperation to be more common for systems maintenance functions than for other types of local public goods and services (Rawlings, 2003; Savitch and Vogel, 1996; Julnes and Pindur, 1994). Post's (2002) analysis of intergovernmental transfers of funds showed that local governments are more likely to use interlocal arrangements for road construction, housing, parks, and water distribution than other goods and services. Part of her explanation for this reliance on cooperative service arrangements was the high initial costs for these types of services.

Asset specificity is the degree to which specialized investments are necessary to produce a good or service. Brown and Potoski (2003) demonstrated that the relationship between interlocal contracting and asset specificity is nonlinear. They found that local governments are less likely to contract with neighboring units for production as asset specificity increases, but that when asset specificity reaches very high levels, local governments are substantially more likely to contract with other local units rather than to produce them independently.

We agree that high degrees of asset specificity, substantial initial costs, and the presence of significant scale economies mean that public works are strong candidates for provision through interlocal agreements. However, extant research has identified several other factors generally expected to influence the likelihood of using cooperative arrangements for local public services. These factors can be grouped into four types of explanations: local economic factors, characteristics of the communities in areas adjacent to the local government, demographic characteristics of the local government, and the influence of policy and planning networks. Many of these other factors are likely important for explaining the reliance by local governments on interlocal service agreements for public works.

ECONOMIC FACTORS

Instead of focusing on the cost characteristics of individual services, economic explanations suggest that variations in the fiscal capacity of communities to fund local services are important predictors of interlocal cooperation. Local governments are expected to turn to interlocal agreements when they have insufficient resources to meet current service demands or to undertake necessary infrastructure improvements (Sonenblum, Kirlin, and Ries, 1977).

Krueger and McGuire (2005) propose that local governments experiencing fiscal stress or with high-need populations will be motivated to attempt to generate slack resources, and cooperative service arrangements may provide a means to this end. Indeed, their research shows that cities with lower tax revenues per capita are more likely to cooperate on service provision with neighboring communities. High property taxes are believed to be another economic factor contributing to the use of interlocal agreements. Government officials from high tax cities may see cooperation as a way to reduce costs, which in turn may enable them to reduce taxes. Tax reduction may be seen as necessary to retain current residents and attract new ones to the community (Krueger and McGuire, 2005). Another explanation for service agreements is that jurisdictions with high property taxes may be approaching the maximum tax levies allowed by state law, providing another incentive to reduce costs (Morgan, et al., 1988).

Another potential factor is the role played by intergovernmental revenues in promoting cooperation among local governments. One perspective is that local governments receiving larger shares of their budget from intergovernmental revenues experience less fiscal stress and have less incentive to cooperate (LeRoux, 2006). However, heavy reliance on intergovernmental revenues may mean that their revenues are less stable than if the funding was provided through own-source revenues, encouraging cost savings behaviors. Also, federal and state grants may often require the participation of multiple local stakeholders as a condition of receiving funding, strongly encouraging cooperation (Krueger and McGuire, 2005).

The average wealth of the community may also be an indicator of a local government's propensity to cooperate with its neighbors. One common expectation is that jurisdictions heavily populated by low-income residents will be more inclined to seek interlocal agreements (Morgan and Hirlinger, 1991). These communities are more likely to experience fiscal stress, and at the

same time, have large numbers of residents relying on public services. On the other hand, wealthier jurisdictions may be less likely to cooperate because they can meet current service demands through own-source revenues and can easily finance desired service enhancements through their own resources. However, communities that are *very* wealthy may also cooperate, but for different reasons than poor communities. Morgan and Hirlinger (1991) argued that jurisdictions comprised of economic elites are more likely to use interlocal agreements because they can afford special services and are more willing to experiment with alternative approaches to service delivery. Indeed, Morgan and Hirlinger found a nonlinear relationship for this factor; as community wealth increases, local governments were less likely to cooperate, but *very* wealthy communities were more likely to use interlocal contracting arrangements.

Finally, another economic factor affecting cooperation is the proportion of local government expenditures devoted to a particular service. The larger the share of overall expenditures devoted to any one service likely creates an incentive to reduce the costs of this service. For example, local governments that have a large proportion of their budget devoted to public works experience the problem of opportunity costs. Funds that are spent on public works cannot be spent on other local public services such as public safety. Local elected officials may prefer greater spending on services of the latter type because they are more visible to citizens. Interlocal service agreements may be seen as a way to create slack resources that can be used for other types of services.

REGIONAL CHARACTERISTICS

A second set of explanations for the use of interlocal agreements can be roughly

characterized as regional characteristics that influence service supply and demand. The

population and rates of population growth or decline in individual local governments likely play

a role in influencing the demand for public services (LeRoux, 2006). Older, highly developed,

communities with large populations and high population densities often have "full-service"

governments and residents may favor direct provision. However, substantial increases or

decreases in population necessitate changes to existing service levels, which may encourage the

consideration of service-sharing arrangements to purchase any needed additional services or to

reduce excess capacity. Communities losing population over a sustained period of time may be

left with higher service costs than can be supported with the remaining tax base, and may find

interlocal agreements an attractive option for reducing costs (LeRoux, 2006).

Three additional geographic factors that may affect the use of interlocal agreements are

the extent to which the area's population is concentrated in a single or few jurisdictions, the

number of potential suppliers/buyers in the area, and the population density of the unit. Previous

studies of interlocal cooperation have found that local governments situated in metropolitan areas

are more likely to use interlocal agreements (Morgan and Hirlinger, 1991). The explanation for

this finding is partly based on the logic of high population densities in metropolitan areas

creating a sense of shared problems and a willingness to cooperate across jurisdictional lines.

Kelleher and Lowery (2004) suggest that people living in urban areas where much of the

population is concentrated into a few communities are more likely to see themselves as

interconnected and to recognize the benefits of cooperation. In a study of interlocal cooperation in Georgia communities, Campbell and Glynn (1990) found that counties with a majority of population residing in cities were more likely to cooperate with other local governments. However, they did not find a similar relationship for interlocal cooperation by city governments.

Post (2002) has argued that cooperation on services increases in proportion to access to potential collaborators. Greater numbers of jurisdictions directly bordering a particular unit of local government may increase the likelihood that it will enter into service sharing arrangements. Access to an abundance of other local governments, however, does not necessarily increase opportunities for cooperation if many of the jurisdictions in question are small and exiguous in their provisions, or so large that they are self-sufficient (Post, 2004). Thus, a third factor affecting the likelihood of cooperation is the distribution of population across the local governments in the area. When the population within the county, for example, is concentrated into a few jurisdictions, interlocal cooperation may increase because these larger units may be the only ones in the area with the financial resources to provide the service. This seems especially likely with services that have large upfront costs and require expensive asset specific equipment. However, for other services, more evenly distributed population may suggest lower incentives for cooperation because each jurisdiction may have sufficient population—and tax base--to provide the service independently.

DEMOGRAPHIC CHARACTERISTICS

The demographic composition of the community may also impact the likelihood that a jurisdiction will seek to cooperate with others on service provision. The two demographic

measures cited most often are the size of the population that is over 65 and the share that is

nonwhite. These two groups are thought to be more highly dependent on local services and

therefore, to favor direct provision. For example, Morgan and Hirlinger (1991) found that the

presence of a large population of older persons was associated with a lower reliance by cities on

interlocal agreements. They proposed that older people tend to be more highly engaged in

community politics and are more likely to favor the status quo. Given that seniors are more

informed, active, and partial to existing arrangements, public officials may be reluctant to oppose

this constituency. Another perspective on the size of the nonwhite population is based on

expectations about the effects of racial heterogeneity, rather than on patterns on service demands

attributed to nonwhite residents. Oakerson (2004) has argued that homogeneity of the citizenry

enables local public officials to "speak with one voice" in making governing decisions on behalf

of the local electorate. As the size of the nonwhite population increases, public officials may be

less inclined to seek interlocal service agreements because of difficulties in accommodating the

diversity of preferences in their community and will instead rely on direct supply to avoid

controversy.

POLICY AND PLANNING NETWORKS

Finally, local governments affiliated through policy and planning networks, such as

councils of government or other types of regional planning bodies, may be more likely to

cooperate on services (Lackey, Freshwater, and Rupasingha 2002; Thurmaier and Wood, 2002).

As regional planning entities, councils of government and metropolitan planning organizations

facilitate interaction among city managers and functional specialists throughout a region, and

may function in a brokering capacity for local governments who wish to enter into service sharing arrangements. Moreover, these types of organizations provide opportunities for ongoing face-to-face contact among governing officials, which is believed to increase trust and reduce transaction costs to enable cooperation by local governments (Feiock, 2004).

Analysis

The data used in this study are taken from a larger project on service delivery arrangements used by local governments in Michigan.[1] The project surveyed local government officials in Spring 2005 about the service delivery arrangements in their unit for 116 different local public services.[2] The data were collected through surveys of the city administrator or mayor, village manager or president, or township supervisor of every local general-purpose government within twenty-four Michigan counties. Responses were received from 70 percent (468 units) of the governments surveyed and were evenly distributed across the three different types of jurisdictions.[3]

The survey data reveal the service arrangements used by responding jurisdictions for ten different public works services. Table 1 identifies the service areas examined, and the variables and measures used in the analyses. Interlocal cooperation is measured as a dichotomous variable indicating the local government reported sharing service provision with another local government. More specifically, a local government is considered to engage in interlocal cooperation if it was reported to: purchase the service from the county or another city, village, or township; take part in a joint provision arrangement with one or more of these other governments or; have transferred the responsibility for providing the service to another local general-purpose

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government. This measure of interlocal cooperation indicates the existence of interlocal service arrangements, but does not measure the extent of the cooperation in terms of levels of shared activities, dollars expended, or people served. Also, this measure does not identify the partner(s) in these arrangements, only that the local unit has a partner in the delivery of this service. These are significant limitations, and they prevent us from drawing insights about how the factors examined in this study affect the extent of cooperation and choices of partners.

Insert Table 1 about here.

We use logistic regression to examine the factors affecting the likelihood that Michigan local governments cooperate on these ten different public works services. Each model includes measures for the four groups of explanatory variables suggested by the literature review in the previous section: economic factors, local/regional characteristics, local demographic characteristics, and policy and planning networks. A problem often confronted in cross-sectional multivariate analyses is a situation in which the value of the dependent variable is conditional on the level of some another variable, thus violating the standard assumption of conditional exchangeability (Zorn, 2006). This violation is especially likely to occur when data are grouped or clustered in some way and the within-group variation in these observations differs from the variations seen across the groups. In some instances, the basis for this clustering is obvious, such as with repeated measures of subjects, and in other times, the basis is less clear.[4] In this case, the choice of the type of local government as the cluster variable is straightforward.

The models in Tables 4 and 5 treat local governments of each type as clusters because the decision made by local public officials to cooperate on services with other local governments is

affected, at least in part, by whether the local government is a municipality, village, or township. In Michigan, these three governments were conceived to operate as a system of local government, with substantially different expectations for the types and levels of public services provided by each type of local government. Townships were expected to provide basic services to the rural areas of the state; villages were designed to provide expanded services for the more densely populated areas of townships; and municipalities were intended to be the "full service" units in the system, authorized to provide a wide range of services to their residents (Ryan and Lupher, 2003). These distinctions have been eroded somewhat in recent decades, but important differences remain among the three types of governments in authorized services, and taxing and bonding authority.[5] Thus, to a large extent, governments of the same type have similar service responsibilities, revenue sources, and are subject to similar limits on tax and debt. These similarities mean local governments of the same types share propensities to cooperate on particular services beyond what can be explained by similarities in factors such as economic resources, regional characteristics, the demographic makeup of the community, and participation in planning and policy networks.

Discussion

Tables 2 and 3 describe the service delivery tendencies of the local governments included in this study. Table 2 shows the arrangements indicated by those governments reporting they provided the service through a cooperative arrangement with another local government or a private provider. These data show that these governments cooperate on roads much more frequently than they do on the water and sewer utilities examined. These jurisdictions reported

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using special districts for these two groups of services at approximately the same rates, but rely more heavily on private contractors for the construction and improvement of roads, and for maintaining streetlights. Table 3 illustrates the variation in the use of cooperative arrangements for these same services across the three types of local governments. Townships reported cooperating with other local governments on roads much more frequently than did municipalities and villages. Given that in the Michigan system, cities and counties spend the bulk of the money expended on roads in the state, this is not surprising (Ryan and Lupher, 2003). The typical township government is far more likely to rely on the county for road services than to directly provide this service. In contrast, municipalities reported using cooperative arrangements for most water and sewer services more frequently than did villages and townships.

Insert Tables 2 and 3 about here.

Tables 4 and 5 present the findings of the multivariate analyses examining measures of local economic factors, local demographics, regional characteristics, and participation in policy and planning networks on the likelihood of the local government engaging in interlocal cooperation for these ten public works services. The findings show that the roles played by the factors vary in interesting and important ways across the different types of services and among the services in each group.

ROLE PLAYED BY ECONOMIC FACTORS

We turn first to the models examining services for roads and streets. Local economic factors appear to play a role in decisions by local governments to cooperate in most aspects of the roads services examined. Maintaining streetlights is the only road/street function in which the economic measures examined were not statistically related to the likelihood of cooperation on the service. The analyses show that units with high per capita property taxes rely more heavily on cooperative arrangements for road construction and improvement, and for maintaining roads. Per capita property taxes, however, are not related to the likelihood of cooperation when it comes to the lower cost activities of maintaining traffic signs, signals, and streetlights. Units with a greater reliance on intergovernmental revenues were more likely to collaborate on roads. It is unclear whether this reliance is due to grantors favoring collaborative projects in their funding decisions, because the instability of the grant funding encourages cost minimizing/sharing activities, or for some other reason. However, it is clear that a greater reliance on intergovernmental revenues is not associated with less cooperation as suggested in past works.

The findings also show that cooperation on roads is less likely as wealth increases, except that the wealthiest communities are more likely to cooperate, confirming the nonlinear relationship asserted in earlier studies (Morgan and Hirlinger, 1991). When communities are very poor they are more likely to cooperate on road and street services, probably by relying on the county. This tendency toward cooperation disappears as community wealth increases, but reemerges among very wealthy communities. Finally, the proportion of unit expenditures devoted to public works also increases the likelihood of cooperation, but only for construction and maintenance of roads. This finding is consistent with the argument offered in the literature

that local governments are more likely to cooperate when a large portion of their budget is devoted to a particular service.

Turning to the utilities models, the findings reveal that the measures of local resources available to local governments matter far less in the decision to cooperate on water and sewer utilities. The per capita income measures are not statistically significant in any of the six models and the property tax burden measure is significant in only two (water and sewer treatment) models. The intergovernmental revenues measure is significant in only a single (water treatment) model, suggesting that variations in non own-source resources are not decisive either. In the two models examining treatment services, greater economic resources are associated with less cooperation with other local governments for these services. The findings from these models also reveal that cooperation on sewer collection and treatment is less likely when public works is a large share of the unit's total spending.

Two general conclusions can be drawn from these findings. First, road and street services, particularly those related to construction and improvement, are expensive, but the cost of utilities is greater. The expense involved with constructing and maintaining water and sewer is a significant burden for many communities, even those with high property values and high-income residents. Spending on roads and streets are fairly easily limited to what can be afforded by the local government, whereas the costs of utilities can increase in large chunks as capacity is increased. Also, a change to the capacity of utilities is lumpier than it is for roads and streets, and expansions of utilities often result in large additions to the numbers of people served. Second, unlike roads, water and sewer utilities are typically supported through user fees designed to recover the costs of providing the service. This likely reduces the connection between local resource levels and the ability of communities to provide the utility services.

ROLE PLAYED BY LOCAL/REGIONAL CHARACTERISTICS

Local/regional characteristics capture the effects of variations in local population, density, and population change over the previous decade on the unit's likelihood of cooperating with other local governments to provide public works. These measures also reveal how the population distribution in the area affects the likelihood of the unit cooperating and if the number of bordering cities matters in these decisions. The findings show that these factors are part of the explanation for decisions to cooperate on road construction and improvement, and for maintaining roads. However, local/regional characteristics are less useful for understanding decisions to cooperate on maintaining the ancillary transportation infrastructure of road signs, signals, and streetlights.

The regression models show that these measures are related to cooperation levels on roads, largely as predicted by previous studies. Populous and high growth units are more likely to cooperate than their smaller and slower growth counterparts. This finding may reflect cooperation to support enhanced services in growing areas. More densely populated units are less likely to cooperate on roads, suggesting, perhaps, that more dense populations mean lower road costs on a per capita basis, and less pressure to reduce or share costs. Put another way, the findings show that less density means more cooperation, which also makes intuitive sense. In Michigan, rural townships often cooperate with counties to provide roads services (Ryan and Lupher, 2003).[6] Finally, local governments in counties where the population is concentrated into a few jurisdictions are more likely to cooperate on constructing and improving roads.

An unexpected finding is the apparent cooperation-depressing effect of having larger numbers of potential collaborators in the immediate area. In half of the models, units with larger numbers of local governments immediately adjacent to them were less likely to cooperate on roads. In other two models, the number of bordering communities was unrelated to the cooperation levels.

Table 5 shows very similar findings for these local and regional demographic measures in the utilities models. Populous and high growth communities generally (10 of 12 models) rely more heavily on interlocal cooperation for the utilities examined. As already noted, capacity increases in utilities are lumpy, or non-incremental, and local governments experiencing rapid population growth may have difficulty expanding service levels to meet the demands of a larger population at a cost they can afford. In this situation, local officials may view cooperation with another local government that already has made the investments in infrastructure as a cost-effective way to manage the community's growth.

Population density is generally not related to cooperation on water and sewer utilities in these models. This measure is statistically significant for only two functions (sewer treatment and stormwater management) and the coefficients indicate different relationships to the likelihood of cooperation. Likewise, units in counties that are highly concentrated are more likely to cooperate on sewer treatment and storm water management. The extent of population concentration is unrelated to cooperation on the other four services

Finally, the number of potential collaborators is related to cooperation in four of six models. However, as with the roads models, greater numbers of adjacent local governments reduce the likelihood of cooperation on sewer and stormwater services. This is a very important finding, given the attention to the supply of alternative providers in the contracting literature

(Brown and Potoski, 2003; Morgan and Hirlinger, 1991). These findings suggest that access to potential service suppliers is not as important as Post (2002) concluded, at least when it comes to cooperation on public works.

ROLE PLAYED BY LOCAL DEMOGRAPHIC CHARACTERISTICS

The regression models in Tables 4 and 5 include measures intended to capture the influence of two important local constituencies on the likelihood a unit cooperates with other local governments on roads or utilities. Both constituencies, seniors and nonwhite residents, are expected to prefer the status quo and to generally resist services contracting, irrespective of whether the contractor is a private firm or another local government. Our findings provide limited support for this depiction. With regard to roads, three of four models show that a larger population of seniors is associated with less cooperation on these services and half of the models show that a larger nonwhite population is also linked to less cooperation. The size of either group is not statistically related to the likelihood of cooperation on road construction and improvement. Thus, in a broad sense, both sets of findings confirm patterns found in previous works and lend support to the idea that both constituencies resist shared service arrangements, even when the other party is another local government.

However, the findings for the models examining water and sewer services lend support to a slightly different conclusion about the role of these two groups. Most of the models (4 of 6) show no statistical relationship between these two demographic measures and cooperation. The two models that do are for water and sewer treatment. A larger population of older people and nonwhites means more cooperation is *more* likely on these two services. Our findings for both

sets of services confirm previous findings but add depth to our understanding of the role played by seniors and nonwhites in interlocal cooperation. Larger shares of these two groups in the local population are associated with a higher reliance on public works cooperation in the case of the two most expensive services; are unrelated to cooperation on moderately expensive services; and are associated with lower cooperation on the cheaper services.

ROLE PLAYED BY PLANNING AND POLICY NETWORKS

Finally, the models in Tables 4 and 5 provide no support for the idea that membership in the local council of governments effects the likelihood that a city, village, or township government will cooperate with other local governments for the provision of roads or water and sewer utilities. Of course, COG membership is only one way to measure the role of planning and policy networks, and it is possible that participation in other local networks affects the cooperation decision. The difficulty in effectively measuring this factor is that these networks are often fairly informal and may simply amount to participation in a regular meeting where participants discuss common issues (LeRoux, 2006).

Conclusions and Implications

This analysis of interlocal cooperation on public works in Michigan offers several insights about collaboration on local public services. Local governments regularly cooperate on the provision of a variety of public works services, including road construction and maintenance, and on a variety of water and sewer utilities. Township governments are somewhat more likely

than villages and municipalities to cooperate on roads, and municipalities are slightly more likely to cooperate on water and sewer utilities than townships, and much more likely than village governments. Substantial scale economies, large initial costs, and the high asset specificity of these services make them likely candidates for contracting or some form of shared service delivery. Yet despite the expected cost advantages of collaborating on public works services, many local governments do not collaborate.

The study has also sought to provide insights into the role played by factors other than the cost characteristics and asset specificity of the services in explaining public works cooperation. The findings show that the other factors, especially the measures of local economic resources, population levels and distribution, and size of key constituencies, are related to the likelihood of cooperation matter in predictable ways. This is an important finding. Although research on interlocal cooperation has steadily increased in recent years, much of this work focuses on the cost and measurement characteristics of public services. The analyses presented here show that characteristics of the community are also important factors in understanding decisions to cooperate on service delivery.

While fiscal considerations play an important role in shaping cooperation decisions for some types of services, they do not serve as a universal rationale for cooperation decisions. Fiscal considerations drive cooperation decisions only to the extent local governments have some discretion over the level or quantity of the service. While both roads and utilities are capital intensive, spending for services such roads and streets can be fairly easily limited to what the local government can afford, whereas the costs of utilities can increase in substantial increments as capacity is increased. Jurisdictions may delay a regularly scheduled road repair because of cost considerations, but they do not have the same luxury when it comes to ensuring residents

have clean water to drink. In short, local economic resources available to the community only dictate cooperation decisions to the extent there is decision flexibility built into the service.

This analysis also demonstrates that access to potential collaboration partners is a necessary but insufficient condition for cooperating on public works. The size, growth pattern, and composition of the community, along with amount of flexibility that local public officials have with regard to spending for the service are what provide the basis for cooperation on public works. Moreover, the role of various groups and constituencies in influencing cooperation decisions cannot be underestimated. While certain constituencies may be successful in influencing cooperation decisions only on functions that are less expensive to begin with, this analysis nevertheless suggests a need to involve citizens in decisions early in the planning process.

Finally, even though it is unclear from this analysis whether interlocal agreements result in cost savings, local governments might enjoy dividends in the form of intangible benefits by engaging in these transactions. Interlocal agreements help to build trust among local government officials. As a result, interlocal agreements may pave the way for future cooperation between jurisdictions. To the extent that local governments will need to act collectively in the future in order to manage transjurisdictional problems, interlocal agreements may be useful because they help to establish the foundation for cooperative norms.

Future research on public works cooperation should focus on factors that were beyond the scope of this analysis. Additional explanations for public service cooperation more generally include form of government, professional management, and jurisdictional participation in forums that provide opportunities for interaction among governing officials. The political incentives of

elected officeholders may also help to shape interlocal cooperation decisions, and might thus be

examined in future analyses.

Notes

1. This larger project sought to catalog the services offered by Michigan local governments and to identity the arrangements used to deliver these services. The Citizens Research Council of Michigan (www.crcmich.org) collected these data in 2005 with funding from the C.S. Mott Foundation, the Earhart Foundation, the Frey Foundation, the Gilmore Foundation, and the Community Foundation for Muskegon County.

2. For each service, respondents were provided ten options and asked to choose the one that best described their unit's service delivery arrangements. Respondent were asked to choose multiple responses only when necessary. The options presented were: (1) **Does not provide or contract for this service**-this service is not the responsibility of, and therefore is not provided by, your unit. (2) **Directly provides this service**-your unit is providing this service, through its employees, directly to its residents. (3) **Also provides this service by contract to residents of anther community**-your unit is providing this service, through some sort of contract or agreement, to residents of another community, in addition to providing it to your own residents. (4) **Provides this service in cooperation *with* the county or another municipality**-your unit has entered into an agreement with your county to jointly provide this service to your and other residents, or with a neighboring jurisdiction to provide this service to both units' residents in conjunction. (5) **Has this service provided *by* the state**-your unit contracts with the state to provide this service to your residents. (6) **Has this service provided *by* the county**-your county provides this service to all your residents. (7) **Has the service provided *by* another municipality**-your unit has some sort of agreement or contract with another local jurisdiction to have them deliver this service to your residents. (8) **Has this service provided *by* a special authority or special district**-your unit has joined a special authority with other units of local government to provide this service to all residents within the special authority. (9) **Has this service provided *by* a private provider**-your unit has hired, or contracted with, a nongovernmental private firm-for profit or nonprofit-to provide this service to residents. (10) **Do not know how this service is provided**-you are unaware if this service is being provided by another unit, but your unit is no currently providing this service.

3. The surveys were mailed in Winter 2005 to every city, village, township, and county government in 24 Michigan counties. These 670 units of government represent 36 percent of the 1,859 general-purpose local governments in Michigan and contain 78 percent of the state's population. Responses were received from 464 of the 670 governments surveyed, for a response rate of 69 percent. Response rates for each type of government were: 67 percent for counties (16 of 24); 71 percent for cities (114 of 160); 65 percent for villages (54 of 83); and 69 percent for townships (280 of 403). For additional information on the survey, see CRC (2005).

4. Zorn (2006) cautions that the selection of the cluster variable will have a greater effect on the substantive conclusions drawn from the analysis than the choice of estimator.

5. Michigan law permits residents of townships to adopt a "charter" township government, which enables the unit to have certain powers not permitted to general law townships. Similarly, Michigan law also allows residents of general law villages to adopt home rule charters giving these units additional powers. See CRC (1999).

6. Townships in Michigan are not required to participate in road construction and maintenance. They may choose to do so, but many simply leave this responsibility to the county (Ryan and Lupher, 2003). Many townships reported cooperating with the county government for road construction and maintenance. However, in many of these instances it may be more accurate be term this service arrangement as county provision of a county responsibility.

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Table 1: Description of Variables and Measures

Dependent Variables	Mean/ Std Dev.	Min/ Max	Description/Coding/Source
Interlocal Cooperation on Roads and Bridges			
Construction/Improvement	.63/.48	0/1	Unit cooperates on provision of service with a city, village, township, or county government, by *providing* the service to another government, *jointly providing* it with another government, or *having this service provided* to it by another government. Variable takes on values of 0 (No) or 1 (Yes). Source: *Catalog of Local Government Services Cooperation*, the Citizens Research Council of Michigan, 2005
Maintenance	.62/.48	0/1	
Signs and Signals	.70/.45	0/1	
Streetlights	.32/.46	0/1	
Interlocal Cooperation on Utilities			
Water Distribution	.31/.46	0/1	Unit cooperates on provision of service with a city, village, township, or county government, by *providing* the service to another government, *jointly providing* it with another government, or *having this service provided* to it by another government. Variable takes on values of 0 (No) or 1 (Yes). Source: *Catalog of Local Government Services Cooperation*, the Citizens Research Council of Michigan, 2005.
Water Treatment	.39/.49	0/1	
Sewer Collection	.31/.46	0/1	
Sewer Treatment	.42/.49	0/1	
Storm Water Collection	.25/.43	0/1	
Storm Water Management	.28/.45	0/1	
Independent Variables			
Economic Factors			
Public Works Spending	17.8/14.4	0/65	Proportion of the unit's total expenditures devoted to public works in 2004. Source: Annual Local Unit Fiscal Report (Form F-65), State of Michigan, Department of Treasury.
Intergovernmental Revenues	41.1/17	0/79	Proportion of the unit's total expenditures from county, state, and federal sources in 2004. Source: Annual Local Unit Fiscal Report (Form F-65), State of Michigan, Department of Treasury.

Property Tax Per Capita	176/259	0/4367	Unit property taxes per capita in 2004. Source: Annual Local Unit Fiscal Report (Form F-65), State of Michigan, Department of Treasury.
Income Per Capita	23,095/9,589	2,396/110,683	Unit personal income per capita in 2004. Source: U.S Census Bureau, 2000 .
Income Per Capita (Squared)	19.99/.617	15.6/23.2	Log of unit's personal income per capita in 2004 squared. Source: U.S Census Bureau, 2000.
Local/Regional Characteristics			
Population	8.4/1.3	4.1/13.8	Log of unit's population in 2000. Source: U.S Census Bureau, 2000.
Population Change	12/23.7	-75/387	Percent change in unit population from 1990 to 2000. Source: U.S Census Bureau, 2000.
Population Density	1084/1515	1.5/10940	Persons per square mile in unit in 2000. Source: U.S Census Bureau, 2000.
Adjacent Borders	3.3/1.5	1/9	Number of local governments with borders directly adjacent to the unit in 2002. Source: LeRoux, 2006.
Extent of Population Concentration	.13/.06	.04/.27	Herfindahl index of 2000 population dispersion across the local governments within the unit's county. Index is calculated by summing the squared population proportions of each local government within the county. Variable ranges from 0 to 1. Source: U.S Census Bureau, 2000.
Local Demographic Characteristics			
Size of older population	12/4.10	4/39	Percentage of unit population in 2000 that is age 65 or over. Source: U.S Census Bureau, 2000.
Size of nonwhite population	6.9/11.7	.28/95	Percentage of unit population in 2000 that is nonwhite. Source: U.S Census Bureau, 2000.
Policy and Planning Network			
COG Member	.47/.49	0/1	Dichotomous variable indicating local unit is a member of a "Council of Governments" in 2002. Variable takes on values of 0 (No) or 1 (Yes). Source: Michigan Association of Regions, 2005.
Cluster Variable			
Type of Government	2.3/.85	1/3	Categorical variable indicating type of local general-purpose government. Variable takes on values of 1 (City), 2 (Village), and 3 (Township). Source: State of Michigan, Department of Treasury, 2004.

Table 2
Local Governments' Choice of Alternative Service Delivery for Public Works:
Roads, Water, and Sewer

	Interlocal Agreement	Special District/ Public Authority	Private Contractor
Roads			
Construction/improvement	63%	1%	23%
Maintenance	63%	>1%	8%
Signs and signals	70%	>1%	6%
Streetlights	32%	3%	38%
Water and Sewer			
Water distribution	31%	4%	4%
Water treatment	40%	6%	4%
Sewer collection	32%	5%	4%
Sewer treatment	42%	6%	4%
Storm water collection	25%	2%	5%
Storm water management	23%	2%	3%
n=445			

Row totals do not add to 100% because some jurisdictions provide independently of cooperative or contractual arrangements and a small number indicate they do not provide these functions at all.

	Table 3		
	Percentage of Local Governments that Cooperate on Public Works:		
	Roads, Water, and Sewer		
	Municipalities	Villages	Townships
Roads			
Construction/improvement	21%	21%	89%
Maintenance	19%	10%	91%
Signs and signals	49%	20%	88%
Streetlights	17%	6%	43%
Water and Sewer			
Water distribution	37%	8%	34%
Water treatment	60%	19%	35%
Sewer collection	41%	7%	32%
Sewer treatment	68%	15%	37%
Storm water collection	21%	8%	30%
Storm water management	25%	4%	26%
n=	112	54	274

Table 4
Why do Local Governments Cooperate on Road Functions?
Factors that Explain Cooperation on Traffic Signals and Construction/Maintenance of Roads and Streets

	Construction and Improvements		Maintenance		Signs and Signals		Streetlights	
	B	SE	B	SE	B	SE	B	SE
Economic Factors								
Public works spending	.013**	.005	.011	.007	.011	.008	-.000	.009
Intergovernmental revenues	.057***	.019	.047***	.010	.057**	.025	.004	.013
Per capita property tax	.000**	.000	.000***	.000	-.000	.000	-.001	.002
Per capita income	-.000***	.000	-.000***	.000	-.000**	.000	.000	.000
Per capita income sq	2.858***	.593	1.585***	.521	2.819***	1.085	-.330	.770
Local/Regional Characteristics								
Population	.315*	.188	.635***	.242	.362	.287	.293	.231
Population change (%)	.013**	.005	.003	.008	.013***	.005.	.006	.010
Population density	-.000***	.000	-.000***	.000	-.000	.000	-.000	.000
Adjacent borders	-.134***	.033	-.103***	.028	-.072	.113	-.000	.076
Pop concentration in county	4.192***	.567	1.841	2.364	.545	1.141	-2.984***	.422
Local Demographic Characteristics								
Percent pop >65	-1.042	3.512	-5.659***	.623	-.683***	.019	-12.819***	2.460
Percent pop nonwhite	.002	.016	.001	.018	-.022*	.012	-.007*	.004
Policy/Planning Network								
COG member	-.272	.521	-.696**	.328	-.590***	.076	-.495	.602
Constant	-57.706***	13.335	-35.010***	11.862	-57.497***	21.106	4.554	16.633
Pseudo R^2	.319		.355		.209		.125	
Log likelihood	-141.3259		-134.91484		-148.2463		-176.59318	
n =	317		317		318		317	
n (clusters, jurisdiction type)	3		3		3		3	
*p<.10, **p<.05, ***p<.01								

Table 5
Why do Local Governments Cooperate on Utilities?
Factors that Explain Water and Sewer Cooperation

	Water Distribution		Water Treatment		Sewer Collection		Sewer Treatment		Stormwater Collection		Stormwater Management	
Economic Factors												
Public works spending	-.000	.008	.003	.003	-.011***	.003	-.011***	.004	-.001	.002	-.000	.002
Intergovernmental revenues	-.012	.010	-.020*	.010	-.000	.008	-.000	.001	.002	.004	.000	.011
Per capita property tax	-.000	.001	-.001**	.000	-.000	.000	-.001***	.000	-.000	.001	-.000	.000
Per capita income	-.000	.000	-.000	.000	.000	.000	-.000	.000	.000	.000	.000	.000
Per capita income sq	-.162	.740	1.311	.903	.287	1.070	1.628	1.045	.052	.592	.008	.382
Local/Regional Characteristics												
Population	.605***	.191	.502***	.165	.554***	.070	.620***	.166	.521	.335	.683***	.129
Population change (%)	.006***	.002	.007***	.001	.010**	.005	.014*	.007	.008***	.002	.006	.008
Population density	-.000	.000	.000	.000	-.000	.000	.000***	.000	-.000	.000	-.000*	.000
Adjacent borders	.009	.049	-.005	.022	-.096***	.034	-.112***	.042	-.146***	.043	-.118***	.023
Pop concentration in county	.944	.693	-1.203	1.679	1.368	.932	1.045**	.441	4.788	3.614	3.481**	1.733
Local Demographic Characteristics												
Percent pop >65	2.200	3.672	12.401***	.739	4.459	3.603	11.321***	1.799	.759	3.621	1.117	2.984
Percent pop nonwhite	.006	.012	.009**	.004	.006	.011	.005**	.002	.015*	.008	.005	.015
Policy/Planning Network												
COG member	.168	.582	-.093	.154	-.084	.428	-.150	.243	-.018	.725	-.193	.539
Constant	-3.248	16.180	-30.547*	18.061	-11.825	20.850	-38.467**	19.188	-7.303	12.269	-7.409	7.859
Pseudo R^2	.109		.165		.114		.226		.096		.106	
Log likelihood	-175.35278		-177.62963		-174.06279		-166.53943		-161.98008		-171.25949	
n =	315		316		316		317		314		314	
n (clusters, jurisdiction type)	3		3		3		3		3		3	
*p<.10, **p<.05, ***p<.01												